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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/443,460 11/19/99 KOBAYASHI

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EXAMINER

FISCHER, J

ART UNIT

PAPER NUMBER

1733

DATE MAILED:

10/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/443,460

Applicant(s)

KOBAYASHI ET AL.

Examiner

Justin R Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-8 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1-8, independent claim 1 does not provide a clear and concise description of the claimed invention. In describing the at least one rubber protection sheet, applicant has intended to suggest that said sheet can be disposed either between the bead filler and the carcass ply surrounding it or between the rubber reinforcing layer and the carcass ply nearest thereto; furthermore, more than one rubber protection sheet can be used and in such instances they would be disposed in both locations. Additionally, the claim requires that the at least one rubber protection sheet extend within a defined zone. However, the claim, as currently drafted, provides two scenarios: a) at least one rubber protection sheet is disposed between the bead filler rubber and the carcass ply surrounding it and b) at least one rubber protection sheet is disposed between the rubber reinforcing layer and the carcass ply nearest thereto and within a defined zone. It is the examiner's position, though, that applicant intended to select either of the two locations, with the defined zone being a requirement in either instance. It is suggested that the claim be written in a manner that clearly outlines the embodiments described above.

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Regarding claims 3-8, the limitation "rubber protection sheet" appears. There is insufficient antecedent basis for this limitation in the claim. It is suggested that the language "the at least one rubber protection sheet", as defined in claim 1, be used to provide consistency between the claims

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuruta (JP 10076820) in view of Spragg et al. (US 5,769,980). Tsuruta describes the manufacture of pneumatic tires having a radial carcass extending between a pair of bead cores, a tread portion comprised of one or more rubberized cord plies, a belt arranged on an outer peripheral surface of the carcass, a bead filler rubber taperingly extending toward an end of the tread portion, and a rubber protection sheet disposed between the bead filler rubber and the carcass ply surrounding it such that said rubber protection sheet falls within a zone extending inward from a position of a line segment in parallel to the rotating axial line of the tire passing through an outer end by the bead filler rubber in the radial direction of the tire. However, the reference does not describe the employment of a rubber-reinforcing layer arranged at an inner surface side of an innermost carcass ply and fails to describe the loss tangent of the rubber protection sheet. In any event, rubber-reinforcing layers are conventionally employed in such a

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location to provide a tire with runflat capability, as evidenced by Spragg et al in Figure 1. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a rubber-reinforcing layer at an inner surface side of an innermost carcass ply, as suggested by Spragg et al, in the general tire construction outlined by Tsuruta, as set forth below.

With respect to claim 1, Tsuruta is directed toward pneumatic radial tires having a specific bead region makeup, including a rubber protection sheet that is disposed between the bead filler rubber and the carcass ply surrounding it. Though the reference does not include a rubber-reinforcing layer, such layers are conventionally used in the tire industry to provide a tire with runflat capability, thus allowing a tire to run in an underinflated condition resulting from a puncture. As Spragg et al. depict in Figure 1, the conventional rubber-reinforcing layer (80) extends from a position near the bead core to a position near the end of the tread portion and is disposed at the inner surface side of the innermost carcass ply. Thus, one of ordinary skill in the art at the time of the invention would have readily appreciated the use of a conventional rubber-reinforcing layer in the general tire construction outlined by Tsuruta for the reasons described above.

Regarding claim 2, Tsuruta, as illustrated in Figure 1-7, clearly depicts a tire construction in which at least one of the carcass plies is a turnup ply wound around the bead core from an inside toward an outside thereof.

With respect to claim 3, Tsuruta details multiple embodiments in which the rubber protection sheet is existent over both sides of a straight line drawn from a curvature

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center of a flange of the recommended rim at an inclination angle 60° outwardly in the radial direction of the tire with respect to a line segment drawn from the curvature center in parallel to a rotating axial line of the tire toward the inside of the tire. It should be noted that none of the referenced figures depict the presence of a rim flange; however, the drawings can be used to obtain gross relative dimensions and as such, the curvature suggests a rim flange location in accordance to the limitations of the claimed invention (i.e. the rubber protection sheet is existent over both sides). The examiner has provided the approximate location of the rim flange and the dividing line, as defined by the claimed invention, on a separate page (page 9) of this office action. As evident from the attached figure, the rubber protection sheet extends significantly on both sides of the dividing line (angled at 60°). It should be additionally noted that the embodiments depicted in Figures 3-5 also display a rubber protection sheet that exists within applicant's defined range. Thus, though the examiner is relying on gross relative dimensions, there is a reasonable expectation based on the referenced figures that the embodiments meet the limitations of the claimed invention.

Regarding claim 4, Spragg et al. depicts the conventional rubber-reinforcing layer in Figure 1. In this instance, the rubber-reinforcing layer extends from a tread portion to a position near to the bead core in the bead portion. Furthermore, it appears that the layer depicted by Spragg et al. approaches the bead core and extends over nearly 90% of the bead filler, as determined by the use of gross relative dimensions. Thus, it is the examiner's position that the rubber-reinforcing layer depicted by Spragg et al. would

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extend, in a radial direction, below the radially innermost end of the rubber protection sheet described by Tsuruta and depicted in Figure 6.

With respect to claim 5, the claim attempts to impose a height restriction to the rubber protection sheet **when the rubber protection sheet is disposed along the turnup portion of the carcass ply between the turnup portion and the bead filler.** However, the independent claim does not require a one, specific location for the rubber protection sheet: either between the bead filler and the carcass ply surrounding it (either main portion or turnup portion) or between the rubber reinforcing layer and the carcass ply nearest thereto. Thus, the claim outlines three distinct locations for the rubber protection sheet. The claim, however, adds a limitation **only** when the rubber protection sheet is disposed along the turnup portion of the carcass ply. Therefore, the claim does not add any limitation when the rubber protection sheet is disposed along the main portion of the carcass ply, which Tsuruta describes.

Regarding claim 6, Tsuruta is silent with respect to the modulus at 50% elongation of the rubber protection sheet but does suggest that the hardness of said protection sheet is between 55° and 75° (Column 5, Lines 5-10). Additionally, Spragg et al. are silent with respect to the modulus at 50% elongation of the rubber-reinforcing layer but do suggest that the hardness ranges between 72° and 97° (Column 6, Lines 1-5). Thus, it appears that the rubber protection sheet would have a hardness that is between 0.57 and 1.04 times the hardness of the rubber-reinforcing layer. Though the references are silent with respect to the modulus, it is the examiner's position that the ratio between the 50% modulus of each respective rubber layer would be analogous to

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the aforementioned hardness ratio. As such, the 50% modulus of the rubber protection sheet would be approximately between 0.57 and 1.04 times the 50% modulus of the rubber reinforcing layer, encompassing a large portion of the broad range defined by applicant. It should additionally be noted that a desired property of the rubber-reinforcing layer would be a high stiffness or modulus, while Tsuruta describes the rubber protection layer as a "stress-mitigating layer", which does not appear to require a high degree of stiffness. Thus, it is the examiner's position that the rubber-reinforcing layer would have a larger modulus at 50% elongation than the rubber protection sheet, in accordance to the range defined by the claimed invention.

Regarding claim 8, Tsuruta suggests that the rubber protection sheet is within a range of 0.7-4.5 millimeters and thus encompasses nearly the entire range outlined by the claimed invention (Column 6, Lines 5-7).

Response to Arguments

5. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

6. Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. There was no reference in the prior art search that suggested the manufacture of pneumatic radial tires having a rubber-reinforcing layer disposed axially inside the innermost carcass ply and a rubber

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protection sheet disposed between the bead filler and the surrounding carcass ply, such that the rubber protection sheet had a loss tangent between 0.04 and 0.11.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Justin Fischer

October 19, 2001

ADRIENNE C. JOHNSTONE
PRIMARY EXAMINER
GROUP 1800

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